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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,230	07/21/2000	Takayoshi Hiraga	0670-248	1846

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Robinson intellectual Property Law Office
PMB 955
21010 Southbank Street
Potomac Falls, VA 20165

EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/582,230	HIRAGA ET AL.	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24 is/are rejected.
- 7) ☒ Claim(s) 20-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed June 3, 2004, which has been entered into the file.
- By this amendment, the applicant has amended claims, 20, 22 and 24.
- Claims 20-24 remain pending in this application.

Claim Objections

1. Claims 23-23 are objected to because of the following informalities:

(1). **Claim 20 has been amended** to include the phrase "a diameter of each of said plurality of light spots is diminished" that is confusing and indefinite since it is not clear if the light spots are "diminished" so that they *disappear all together* or that they are "diminished" *with respect to diameters of some other spots* such as the diameters of *aberrant* light spots

(2). **Claim 22 has been amended** to include the phrase "a column of hologram patterns in said hologram member is arranged along a direction of a longer axis of an ellipsoidal spot area in a far field of said real laser light source" that is confusing and indefinite. It is really unclear what is being claimed here. It is not clear if the "*column* of hologram patterns" means the *fringes pattern* of the hologram or not. It appears that the "ellipsoidal spot area in a far field" of the laser light source is at "FAR FIELD", (as compared to the location of the hologram member) which therefore is very confusing how does this far away light spot be able to be arranged along with the "column of the hologram" which if referred to the fringe pattern of the hologram is really small, (i.e. on the order of the wavelength in interest).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Harris (PN. 5,422,753).**

Claim 24 has been amended to include additional features; the corresponding new grounds of rejections are stated as follows.

Harris teaches a scanning optical device that is comprised of a *single real laser light source* (12), an *optical section* (18) that serves as the *light spot forming optical element* for forming a light spot on a *recording medium* (22) and a *binary diffractive optical element* (20) for controlling the beam *intensity* of the light on the recording medium, (please see Figures 2 and 2A, columns 5-6). Harris teaches that the binary diffractive structure has a relief phase grating structure such that when the **single** incident light beam (50) incidents upon the diffraction grating it diffracts the light to provide a *zero order light beam* (52) which causes a *light spot formed* on the recording medium and the diffraction grating causes the light beam (52) and therefore the single light spot to have a *uniform intensity*, (please see column 5, line 64 to column 6, line 14, Figures 2 and 2A).

This reference has met all the limitations of the claims with the exception that it does teach explicitly that the binary diffractive structure is a hologram member. However, by definition a hologram member has a diffractive structure and the only difference for this binary diffractive optical structure to be a hologram member or not is if it is made *holographically or not*. But it is well known in the art to make diffractive structure holographically, and the *method* for making the binary diffractive optical structure does not distinguish the function of the binary diffractive structure in controlling the intensity of the light

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spot. Such modification or difference would therefore have been considered as an obvious matter of design choice to one skilled in the art in choosing a method for making the element and with no patentable distinction or given no patentable weight. Although Harris teaches that the binary diffractive optical element is provided after the light passes through the beam forming optical section, however this function of the diffractive structure for controlling the beam intensity does not change by the order of the arrangement. Such modification is therefore obvious to one skilled in the art since it only involves rearranging parts in the device.

This reference also does not teach explicitly that the device is an optical pickup device. However, this recitation has not been given patentable weight because it has been held that a preamble is denied the effect of limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478, (CCPA 1951). In this case the servo beam spot formation is fully disclosed by the Harris reference.

Allowable Subject Matter

4. Claims 20-23 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.

5. The following is a **statement of reasons** for the indication of allowable subject matter: of the prior art references considered, none has disclosed an optical pickup device having a *single real laser light source* and a *hologram member* that diffracts the light from the laser light source to form at *least two imaginary light sources*. The *hologram patterns* of the hologram member is *determined* to give diffraction light an *inverse aberration* of an aberration caused by optical elements in the optical path from the real light source to the recording medium wherein the aberration includes a *sub aberration caused upon diffraction in forming the imaginary laser light sources* so that the *aberration is canceled* and a

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diameter of each of a plurality of light spots formed on the recording medium is *diminished with respect to non-aberration corrected light spot*.

Response to Arguments

6. Applicant's arguments filed on June 3, 2004 have been fully considered but they are not persuasive. The amended claim 24 has been fully considered and it is rejected for the reasons stated above.

7. In response to applicant's argument concerning the cited Harris reference does not teach the hologram member has hologram pattern which provides a uniform intensity of a single light area the examiner respectfully disagrees. Applicant is respectfully reminded that Harris teaches to use a SINGLE incident light beam (50, please see Figures 2, 2A and 3), the single incident light beam is diffracted by the diffraction grating to provide a light spot formed by the zero order light (52) that has uniform intensity. The light spot formed by the light beam (52) therefore has uniform intensity, (please see column 5, line 64 to column 6, lines 14, and Figure 2A).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

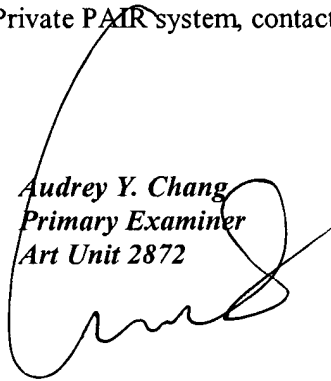
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.